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10/650,538	08/28/2003	Gary A. Diehl	ROC920030133US1	9039

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EXAMINER	
CHRISTENSEN, SCOTT B	
ART UNIT	PAPER NUMBER
2144	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/650,538	DIEHL ET AL.	
	Examiner	Art Unit	
	Scott Christensen	2144	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 March 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 7-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 7-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in regards to the most recent papers filed on 3/24/2008.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-4 and 7-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in US Patent number 7,088,689 B2, hereafter referred to as "Lee" in view of Kirchner et al in US Patent number 6,263,370 B1, hereafter referred to as "Kirchner," and Smyk in US Patent number 6,289,001 B1, hereafter referred to as "Smyk."

With regard to claim 1, Lee discloses a method for implementing proxy Address Resolution for Virtual Internet Protocol addresses comprising the steps of:

identifying a Virtual Internet Protocol interface requiring proxy ARP (Lee: Column 2, lines 19-26. If data is transferred between two VLANs (VLANs have virtual IP addresses associated with the nodes), then a Virtual Internet Protocol interface requiring proxy ARP is identified);

dynamically selecting a proxy agent for said Virtual Internet Protocol interface (Lee: Column 2, lines 45-54), adding an IP address for said Virtual Internet Protocol

interface to an address list of an associated physical adapter for said selected proxy agent (Lee: Column 3, lines 34-41);

and utilizing said associated physical adapter for said selected proxy agent and broadcasting said added IP address for said Virtual Internet Protocol interface with a media access control address of said physical adapter for said selected proxy agent (Lee: Column 2, lines 45-53. The ARP request packet contains both the IP address, which is a Virtual IP address in this case, and the MAC address. This packet is broadcast to all nodes in the local subnet.).

Lee does not disclose expressly that the proxy agent and Virtual Internet protocol interface are in a same subnet. Lee also does not disclose expressly that responsive to failure of said selected proxy agent, dynamically selecting a new proxy agent is for said Virtual Internet protocol interface by TCP/IP code. Lee also does not disclose expressly the step of dynamically selecting said proxy agent for said Virtual Internet protocol interface includes providing TCP/IP code for dynamically selecting said proxy agent. Finally, Lee does not disclose expressly the same subnet being identified by a portion of a Transmission Control Protocol/Internet Protocol (TCP/IP) Internet address.

It is noted that subnet is not explicitly defined in the applicant's specification. Therefore, the term subnet may be interpreted as being a subnet as defined by RFC 917, "Internet Standard Subnetting Procedure," by Jeffrey Mogul in October of 1984, hereafter referred to as "RFC917." Therefore a person of ordinary skill in the art would have known how to have the proxy agent and Virtual Internet protocol interface in the same subnet.

Evidence of this can be found in RFC917. RFC917 discloses that a subnet is a logically visible sub-section of a single Internet network. This allows an organization to have a single connection to the Internet with one IP address for their entire network (RFC917: Page 1, Overview). When applied to Lee, all the components in the invention of Lee would be in the same subnet, as a single organization would likely be implementing the invention within their network. This would further have the same subnet being identified by a portion of the Transmission Control Protocol/Internet Protocol (TCP/IP) Internet address (RFC917: Pages 5-7, Section 2 and the figure on page 5).

It would have been obvious to a person of ordinary skill in the art to have the proxy agent and Virtual Internet protocol interface in the same subnet.

The suggestion/motivation would have been that organizations using subnets can use one number for several networks (RFC917: Overview). By implementing Lee's system on a single subnet, the nodes of the network would have a more direct communication line with each other, but still have access to the Internet.

Kirchner discloses using a TCP/IP interface for a client-server interface, where the server acts as a proxy (Kirchner: Column 10, lines 22-43). If TCP/IP were used with Lee, any selection would involve code written to conform to the TCP/IP standard.

It would have been obvious to a person of ordinary skill in the art to combine TCP/IP of Kirchner with the proxy Address Resolution Protocol of Lee.

The suggestion/motivation for doing so would have been that TCP/IP was a very well known protocol, used in many networks and the Internet. By using TCP/IP, the proxy Address Resolution protocol would be compatible with more networks.

Smyk discloses a proxy agent selector that identifies alternate proxy agents should one or more of the other proxy agents fail and selects one or more alternate proxy agents (Smyk: Abstract).

It would have been obvious to a person of ordinary skill in the art to combine the proxy selector of Smyk with the proxy Address Resolution Protocol of Lee as modified by Kirchner.

The suggestion/motivation for doing so would have been to allow proxy signaling to continue undisturbed in case of a failure (Smyk: Abstract).

A person of ordinary skill in the art would have known how to check for a proxy agent in the same subnet as said Virtual Internet protocol (IP) interface.

It would have been obvious to a person of ordinary skill in the art to check for a proxy agent in the same subnet as said Virtual Internet protocol (IP) interface.

The suggestion/motivation for doing so would have been that the instant claim does not require that only the subnet is checked for a proxy agent. Therefore, a method that searches both in the same subnet and outside the subnet would meet this claim limitation. It is noted that Lee does not explicitly state that the subnet that the interface resides in is not searched. By checking within the same subnet, a proxy agent that is closer to the interface could possibly be found, thereby reducing the overall delay in communications and the burden on the network as a whole.

With regard to claim 2, Lee as modified by Kirchner and Smyk teaches identifying a broadcast ARP response for said Virtual Internet protocol interface (Lee: Abstract. The term "input/output processor response handler task" seems to simply identify the means that are utilized to identify a broadcast ARP response. Also, since a response occurs, it must have been identified), and continuing activation for said Virtual Internet protocol interface including enqueuing said Virtual Internet protocol interface to a proxy list of said selected proxy agents (Lee: Column 3, line 66 to column 4, line 12).

With regard to claim 3, Lee as modified by Kirchner and Smyk teaches setting an associated local IP address of said selected proxy agent in said Virtual Internet protocol interface (This limitation is inherently present. The agent needs to have a local IP address in order to receive any packets, so the address must be set. "To complete activation for said Virtual Internet protocol (IP) interface," as recited in claim 15, is interpreted as intended use, and is not given weight).

With regard to claim 4, Lee as modified by Kirchner and Smyk teaches that the step of dynamically selecting said proxy agent for said Virtual Internet protocol interface includes providing TCP/IP code for dynamically selecting said proxy agent (Kirchner: Column 10, lines 22-43. When Kirchner is combined with Lee, as in the rejection of claim 1 above, the communications would be performed through TCP/IP, meaning code

involving TCP/IP would be utilized to find and assign the proxy agent. Thus, TCP/IP code is provided for dynamically selecting said proxy agent.).

With regard to claim 7, Lee as modified by Kirchner and Smyk teaches that the step of dynamically selecting said proxy agent for said Virtual Internet protocol interface includes answering ARP requests for Virtual Internet protocol addresses (Lee: Abstract) with Transmission Control Protocol/Internet Protocol code for said selected proxy agent for said Virtual Internet protocol interface (Kirchner: Column 10, lines 22-43. As the combination of references as applied to claim 1 above uses TCP/IP, any response to a message would involve TCP/IP messages, which would be in a code conforming to TCP/IP.).

With regard to claim 8, Lee discloses an apparatus for implementing proxy Address Resolution Protocol for Virtual Internet protocol addresses comprising:

a local network (Lee: Fig. 2, VLAN 1 and VLAN 2. Virtual Local Area Networks are interpreted as being similar to the local network as specified in the claim);

a server computer having a Virtual Internet protocol code for dynamically selecting a proxy agent for said Virtual Internet protocol interface (Lee: Column 2, lines 45-54);

code for dynamically selecting a proxy agent for said Virtual internet protocol interface (Lee: Column 2, lines 45-54);

and a proxy ARP (Lee: Abstract) for Virtual AP interface initiation task for adding an IP address for said Virtual Internet protocol interface to an address list of an associated one of said physical adapters for said selected proxy agent (Lee: Column 3, lines 34-41) and for utilizing said physical adapter for said selected proxy agent for broadcasting said added IP address for said Virtual Internet protocol interface with a media access control address of said physical adapter for said selected proxy agent (Lee: Column 2, lines 45-53. The ARP request packet contains both the IP address, which is a Virtual IP address in this case, and the MAC address. This packet is broadcast to all nodes in the local subnet.).

Lee does not disclose expressly that the code for selecting a proxy agent is within the TCP/IP standard. Lee also does not disclose expressly that responsive to failure of said selected proxy agent, dynamically selecting a new proxy agent is for said Virtual Internet protocol interface by TCP/IP code. Lee also does not disclose expressly the step of dynamically selecting said proxy agent for said Virtual Internet protocol interface includes providing TCP/IP code for dynamically selecting said proxy agent and the same subnet being identified by a portion of the Transmission Control Protocol/Internet Protocol (TCP/IP) Internet address.

Kirchner discloses using a TCP/IP interface for a client-server interface, where the server acts as a proxy (Kirchner: Column 10, lines 22-43).

It would have been obvious to a person of ordinary skill in the art to combine TCP/IP of Kirchner with the proxy Address Resolution Protocol of Lee.

The suggestion/motivation for doing so would have been that TCP/IP was a very well known protocol, used in many networks and the Internet. By using TCP/IP, the proxy Address Resolution protocol would be compatible with more networks.

Kirchner discloses using a TCP/IP interface for a client-server interface, where the server acts as a proxy (Kirchner: Column 10, lines 22-43). If TCP/IP were used with Lee, any selection would involve code written to conform to the TCP/IP standard.

It would have been obvious to a person of ordinary skill in the art to combine TCP/IP of Kirchner with the proxy Address Resolution Protocol of Lee.

The suggestion/motivation for doing so would have been that TCP/IP was a very well known protocol, used in many networks and the Internet. By using TCP/IP, the proxy Address Resolution protocol would be compatible with more networks.

Smyk discloses a proxy agent selector that identifies alternate proxy agents should one or more of the other proxy agents fail and selects one or more alternate proxy agents (Smyk: Abstract).

It would have been obvious to a person of ordinary skill in the art to combine the proxy selector of Smyk with the proxy Address Resolution Protocol of Lee as modified by Kirchner.

The suggestion/motivation for doing so would have been to allow proxy signaling to continue undisturbed in case of a failure (Smyk: Abstract).

A person of ordinary skill in the art would have known how to check for a proxy agent in the same subnet as said Virtual Internet protocol (IP) interface, as shown in RFC917 (RFC917: Overview). This would further have the same subnet being

identified by a portion of the Transmission Control Protocol/Internet Protocol (TCP/IP) Internet address (RFC917: Pages 5-7, Section 2 and the figure on page 5).

It would have been obvious to a person of ordinary skill in the art to check for a proxy agent in the same subnet as said Virtual Internet protocol (IP) interface.

The suggestion/motivation for doing so would have been that the instant claim does not require that only the subnet is checked for a proxy agent. Therefore, a method that searches both in the same subnet and outside the subnet would meet this claim limitation. It is noted that Lee does not explicitly state that the subnet that the interface resides in is not searched. By checking within the same subnet, a proxy agent that is closer to the interface could possibly be found, thereby reducing the overall delay in communications and the burden on the network as a whole.

With regard to claim 9, Lee as modified by Kirchner and Smyk teaches the invention as substantially claimed except that the TCP/IP code is responsive to a failure of said physical adapter for said selected proxy agent, for dynamically selecting a new proxy agent for said Virtual Internet protocol interface.

Smyk discloses a proxy agent selector that identifies alternate proxy agents should one or more of the other proxy agents fail and selects one or more alternate proxy agents (Smyk: Abstract).

It would have been obvious to a person of ordinary skill in the art to combine the proxy selector of Smyk with the proxy Address Resolution Protocol of Lee as modified by Kirchner.

The suggestion/motivation for doing so would have been to allow proxy signaling to continue undisturbed in case of a failure (Smyk: Abstract).

With regard to claim 10, Lee as modified by Kirchner and Smyk teaches that the TCP/IP code answers ARP requests to said Virtual Internet protocol address (Lee: Abstract), said ARP requests being provided without a parameter defining an associated local interface being specified with said ARP requests to said Virtual Internet protocol address (Lee: Column 4, lines 13-26. The virtual ARP request does not identify the local interface that the ARP request is actually for, but rather identifies the proxy ARP server.).

With regard to claim 11, Lee as modified by Kirchner and Smyk teaches an input/output processor response handler task for identifying a broadcast ARP response for said Virtual Internet protocol interface (Lee: Abstract. The term "input/output processor response handler task" seems to simply identify the means that are utilized to identify a broadcast ARP response. Also, since a response occurs, it must have been identified), and for continuing activation for said Virtual Internet protocol interface including enqueuing said Virtual Internet protocol interface to a proxy list of said selected proxy agent (Lee: Column 3, line 66 to column 4, line 12).

With regard to claim 12, Lee as modified by Kirchner and Smyk teaches that the IOP response handler task is adapted for setting an associated local IP address of said

selected proxy agent in said Virtual Internet protocol interface to complete activation for said Virtual Internet protocol interface (Lee: Column 3, lines 34 to 47. As the IP address is stored in the memory, the IP address associated with the given MAC address was set, at least in the memory. When the memory is set with the IP address, for all purposes, activation of the Virtual IP interface is completed, at least with respect to the server).

With regard to claims 13-17, the invention claimed is substantially similar to that claimed in claims 1-4 and 9, respectively, and are rejected for substantially similar reasons.

With regard to claim 18, Lee as modified by Kirchner and Smyk teaches that the TCP/IP code (Since the code running the program is written to utilize TCP/IP, it is interpreted as being TCP/IP code) utilizes said physical adapter for said selected proxy agent for answering ARP requests to said Virtual Internet protocol address (Lee: Abstract. As the proxy ARP server (or agent) sends a packet in response to receiving the ARP request packet, the response must utilize the physical adapter of the agent in order to reach the network.), said ARP requests being provided without a parameter defining an associated local interface being specified with said ARP requests to said Virtual Internet protocol address (Lee: Column 4, lines 13-26. The virtual ARP request does not identify the local interface that the ARP request is actually for, but rather identifies the proxy ARP server.).

Response to Arguments

Rejections under 35 USC 112

Applicant's amendment to claim 15 has overcome the applied rejection of claims 15-17 under 35 USC 112.

Rejections under 35 USC 101

Applicant's amendment to the specification filed on 3/24/2008 has overcome the rejection of claims 15-17 under 35 USC 101.

Rejections under 35 USC 103

Applicant's arguments filed 3/24/2008 have been fully considered but they are not persuasive.

Applicant's sole argument with regards to the rejections of the instant claims under 35 USC 103 appears to be that the cited references do not disclose the same subnet being identified by a portion of the Transmission Control Protocol/Internet Protocol (TCP/IP) Internet address, as required by amended independent claims 1, 8, and 13 (See Applicant's Remarks: Pages 15-20. However, a person of ordinary skill in the art would have recognized that subnets, as in RFC917, assign addresses in this manner (RFC917: Pages 5-7, Section 2 and the figure on page 5), as detailed above in the rejection of the instant claims.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Christensen whose telephone number is (571)270-1144. The examiner can normally be reached on Monday through Thursday 6:30AM - 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Vaughn can be reached on (571) 272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Paul H. Kang/
Primary Examiner
Art Unit 2144

/S. C./
Examiner, Art Unit 2144